Chapter 1 PURPOSE OF AND NEED FOR PROJECT

1.1 Project Purpose

This project has been developed to reduce the collision rate and severity of collisions along this section of State Route 16 (SR16) through the development of a transportation solution that fits the physical setting and maintains mobility. The project proposes to meet these safety goals by applying current highway design standards to improve the highways alignment, provide standard width travel lanes, standard shoulder widths, left hand turn lanes, and a clear recovery zone. The project proposes to improve mobility by providing a roadway that can remain open during a 100 yr flood event.

1.2 Project Need

The collision rate on SR 16 from Interstate 505 (I-505) to Brooks is above the state average for similar facilities. From January 1st, 2002 through December 31st, 2004 there were 208 collisions reported with 2 fatalities and injuries in 90 of these collisions. The resulting total collision rate per million vehicle miles is 1.67 collisions per million vehicle miles compared to the statewide average of 0.96 for similar facilities. Of the 208 collisions, nearly 40% are run-off-road type of collisions that the project addresses with standard shoulder widths, and a clear recovery zone. Approximately 35% of these 208 collisions are rear end collisions that the project addresses with left hand turn pockets at intersections with county roads. The total collision rate within the project area has improved since 1999-2002 when the collision rate was more than twice the statewide average. Since that time, several interim minor safety improvements have been made to SR 16 including signage, striping, sight distance improvements, and curve super elevation improvements.

Much of the segment of SR16 from the I-505 Interchange to Esparto lies below the 100 year flood level and becomes impassable during events of this magnitude. There is a 1 percent probability that a storm of this magnitude will occur in any given year.

1.3 Project Background

The Department of Human and Community Development (DHCD) at The University California at Davis (UCD) prepared a Traffic Study using a grant for the Safe Communities project to

address accident problems along SR 16. Safe Communities is an international accident reduction model based upon successful public health models, promoted by the National Highway Traffic Safety Administration (NHTSA). NHTSA has made a strong commitment to the philosophy that communities are in the best position to effect improvements with regards to the motor vehicle safety issues in their community. The California Department of Health Services funded this study in the 1996/1997 fiscal year.

The DHCD, compiled a community profile based upon several sources of statistical and interview data. The Statewide Integrated Traffic Record System of California Highway Patrol (CHP) provided accident statistics for the period between 1987 through 1997. In addition to producing a general profile of accident data and related injuries on SR 16 during this period, the report presents accident data profiles in three geographic areas of the SR 16 corridor. These three areas were examined separately to describe unique issues faced by residents and businesses in each area.

The study also incorporates data collected from local residents living on or near SR 16. A summary analysis of residents' issues is included in the UC Davis Traffic Study report. Three focus groups were conducted for local business owners and seniors, during which period the participants shared their concerns regarding safety issues along SR 16 as well as possible solutions that could be applied to reduce accidents and minimize injuries.

1.3.1 Value Analysis

A Value Analysis (VA) study was conducted to help determine the project scope. Team members included representatives of the Project Development Team (PDT) and local residents. Meetings were held in Sacramento in January 2001.

The VA team developed the following recommendations:

- Provide 2.4 m (8 ft) shoulders and 6 m (20 ft) clear recovery zone/rumble strips on both sides of highway for the length of the project, except within the towns of Esparto and Capay
- Widen and/or replace all bridges
- Left-turn pockets at various public road connections
- Intersection modification at Woodland Avenue and Orleans Street in Esparto
- Intersection improvements at CR 85B and SR 16 west of Esparto
- Intersection improvements at Cache Creek Casino (Rumsey Rancheria)
- Horizontal curve improvements west of Cache Creek Casino at PM 18.4
- Various vertical curve improvements
- Traffic calming improvements in Esparto

- Traffic calming Improvements in Capay

The above recommendations were carried forward by the PDT for further studies and incorporated into all options of the project scope. The traffic calming projects are planned and funded separately from this safety project.

A subsequent VA study was conducted in May 2005 to investigate opportunities for accelerating the project delivery schedule. This VA did not result in any changes to the projects design.

1.3.2 Project Study Report

The Project Study Report (PSR) (October 2001) recommended additional improvements to further improve safety including left-turn lanes, improving curve geometry, flood protection and bridge widening or replacements.

The PSR identified the need to incorporate context sensitive solutions. Context sensitive solutions seek to minimize negative impacts of the project and where possible, enhance communities and the environment. It is an approach that blends transportation projects into a community. Traffic calming in the towns of Esparto and Capay were recommended as a context sensitive solution. The traffic calming projects are being designed, analyzed, approved, and funded separately from this project.

A more detailed account of the project development process can be found in the Comments and Coordination section of this environmental document.

1.3.3 Related Projects

In the last few years, over 30 signs and three additional flashing beacons were installed in an effort to improve transportation safety. Several other projects have been constructed, or are planned for construction, in advance of this major safety improvement project in an attempt to improve safety on the route as quickly as possible.

TABLE 2 OTHER SAFETY IMPROVEMENTS ON SR 16

PROJECT	LOCATION	STATUS
Super-elevation Improvements & Metal Beam Guardrail	3 Locations - Capay Curve and two curves west of Capay	Completed 2004
Install Four Way Flashing Beacon	Yolo 16 PM 31.03 - At CR 89	Completed 2004

TABLE 2 OTHER SAFETY IMPROVEMENTS ON SR 16		
PROJECT	LOCATION	STATUS
Install inverted Thermoplastic on Centerline	Yolo 16 From I-505 to Brooks (Except in Esparto, Capay)	Completed 2003
Improve Sight Distance (Tree Removal)	Yolo 16 PM 26.37 - At CR 85B	Completed 2003
International Striped Crosswalks	Yolo 16, Esparto	Completed 2003 and repainted in 2004
Left Turn Centerline Re-stripe Along Yolo Ave.	Yolo 16, Esparto	Completed 2004
Install 45 MPH sign, Install No-Passing Stripe, Add 55 MPH and 35 MPH signs, Daylight Headlight Signs, etc.	Various locations	Completed 2001/2002
Signalize Intersection and Access Improvements	Cache Creek Casino Frontage	Completed 2004
Signalize Intersection	Northbound I-505 exit to SR 16	Construction planned for 2005
Capay Shoulders	SR 16 through Capay	Colored and textured 8ft (2.4 m) shoulders will be added. Streetlights are also being planned. Construction planned in 2005
Esparto Traffic Calming	SR 16 through Esparto	Yolo County plans to construct some features of the traffic-calming proposal in 2006.
Esparto Fire Station Traffic Signal	Esparto	Dedicated Traffic Signal Construction planned in 2006
Signalized Pedestrian Crossing	Near Madison Street in Esparto	Proposal is being evaluated

1.3.4 Funding and Programming

The project's budget is approximately $48 million for right of way and construction capital costs. This budget was developed based on the Safety Index for this portion of SR 16.

This project is included in the FY 2000/2001 Federal Statewide Transportation Improvement Program (FSTIP) and is proposed for funding from the HB4C program (System Operational Improvements). It is also included in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan (MTP) for 2025 and in Amendment 03-02 to the 2003/05 Metropolitan Transportation Improvement Program (MTIP).

The current project cost estimates range from 41.5 to 45.7 million dollars depending on the project alternatives selected for construction.

Project construction is scheduled to begin in 2008 and complete in 2010.